



# **Dryden Centerwide Procedure (DCP)**

## **Code X**

# **DMS Audit Preparation and Execution**

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Electronically approved by  
Assistant Director for Management Systems

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## **1.0 PURPOSE OF DOCUMENT**

The purpose of this document is to describe the process to prepare for and execute internal audits and to prepare for external or 3<sup>rd</sup> party audits of the Dryden Management System.

## **2.0 SCOPE & APPLICABILITY**

This procedure applies to all audits of the DMS including both internal audits performed by the MSSO and external audits performed by a 3<sup>rd</sup> party auditing organization.

## **3.0 PROCEDURE OBJECTIVES**

- A. Determine if the Dryden Management System (DMS) is in compliance with all applicable plans, policies, regulations, laws, and standards.
- B. Provide information for analysis, measurement, and evaluation of the DMS management and other parties.
- C. Ensure that the auditing process is value-added and promotes continual improvement.

## **4.0 RELEVANT DOCUMENTS**

### **4.1 Authority Documents**

|            |  |
|------------|--|
| NPD 1200.1 | Internal Management Controls and Audit Liaison and Follow-up |
| NPD 1280.1 | NASA Management System Policy                                |

### **4.2 Referenced Documents**

|           |                                   |
|-----------|-----------------------------------|
| DCP-X-032 | Corrective and Preventive Actions |
| DCP-X-003 | Opportunity for Improvement (OFI) |
| DOP-X-001 | DMS Audit Program Plan            |

## **5.0 WAIVER AUTHORITY**

The ADMS has the sole authority to waive or alter the use of this DCP.

## 6.0 ABBREVIATIONS, ACRONYMS, & DEFINITIONS

### 6.1 Abbreviations – None

### 6.2 Acronyms

OFI            Opportunity For Improvement

NCR           Nonconformity Report

### 6.3 Definitions

- A. Audit – Systematic, independent, and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.
- B. Audit Check List – A list of questions prepared by the Auditor Manager, or by the Auditor and approved by the Audit Manager, to guide the Auditor in questioning the Auditee to support the audit objectives.
- C. Audit Manager – Person responsible for the overall audit plan, organizing the audits, and ensuring the audits are held on schedule. The Audit Manager is also responsible for scheduling and organizing 3<sup>rd</sup> party audits and will be the 3<sup>rd</sup> party auditors escort.
- D. Audit Package – The Audit Package includes the Audit Plan, the Audit Schedule (which Codes will be audited, the auditees, and times of the audit), approved Audit Checklists, a list of the documents that will be audited, and a blank sign-in sheet for the opening and closing meetings.
- E. Audit Plan – The plan that describes the goals and objectives for a specific audit and includes a schedule with dates, times, and organizations to be audited.
- F. Audit Program Plan - The plan that describes the goals and objectives for the Center's three-year schedule for auditing the DMS. It also describes the roles and responsibilities of each function of the audit process.
- G. Audit Program Schedule – A schedule outlining the timeline for the required audits to satisfy the three-year ISO certification registration. The schedule defines the scope of each audit (i.e., which sections of the ISO standard are going to be audited), when the audits are to be conducted, and whether it is an internal or a 3<sup>rd</sup> party audit.

- H. Audit Schedule – Schedule of the audit that details the Codes to be audited, the scope of the audit (i.e., Management Responsibility, Design Control, etc.) the auditees, and the date and times of the audits.
- I. Auditor – An individual that has been trained and certified as an ISO 9000:2000 Auditor.
- J. Auditor Briefing – A meeting called by the Audit Manager with the auditees to define the scope and objectives of the audit, hand out the audit packages, make team assignments, and define the requirements of the audit summary.
- K. Closing Meeting – Meeting called by the Auditor with the Director/Office Chiefs, auditees, and other interested parties to discuss the details of the findings (both good and bad).
- L. Finding – Results of the evaluation of the collected audit evidence against audit criteria.
- M. Lead Auditor – An individual that has been trained and certified as an ISO 9000:2000 Lead Auditor. This person will lead the audit team and is responsible for the integrity of the audit findings.
- N. Nonconformance – A finding that is supported by objective evidence and is a requirement of the ISO standard or a DMS process or procedure.
- O. Objective Evidence – Data supporting the existence or verity of something.
- P. Observation – The finding/observation is not supported by objective evidence, a requirement of the standard, the DMS processes, or the DMS procedures.
- Q. Opening Meeting – Meeting called by the Auditor with the Director/Office Chiefs, auditees, and other interested parties to describe the audit scope and objectives and to answer any questions the participants might have.
- R. Systemic Finding – A finding that, by itself, may not result in an observation or nonconformance, but along with similar findings may be determined to be a systemic problem throughout the Center. This may result in an observation or nonconformance.

## 7.0 AUDIT PREPARATION & EXECUTION

The Audit Manager shall periodically review the established Audit Schedule to determine when the next scheduled audit should occur. The Audit Manager shall allow ample time to prepare a plan for the scheduled audit.

### 7.1 Audit Preparation

- A. The Audit Manager shall develop a draft audit plan at least 20 working days before the audit. The audit plan shall include an agenda that contains, at a minimum, the following:
  - 1. Processes/Activities/Organizations to be audited
  - 2. Objectives and scope for each area/organizations to be audited
  - 3. Date(s) of the audit
- B. Changes to the audit plan can be negotiated with the Audit Manager, but the audit must be completed within the time span allotted for the audit.
- C. The Assistant Director of Management Systems (ADMS) or designee must approve deviations to the audit plan.
- D. The MSSO Contractor shall send the draft Audit Plan to the auditees and allow five working days for the auditees to review and concur with the plan. During this five day review the MSSO Contractor shall contact the auditees to finalize dates and times. The MSSO Contractor shall also contact the Director/Office Chief to determine if an opening and/or closing meeting is necessary. If the Director/Office Chief requests the meeting(s), the schedule shall include these meetings.
- E. Any changes to the Audit Plan shall be submitted to the Audit Manager for consideration. Approved changes shall be incorporated into the audit plan.
- F. The Audit Manager shall sign and date the audit plan to signify approval.
- G. Any requests for changes after the five day review must be submitted, in writing (e-mail, memo, etc), to the Audit Manager. Changes must include a justification.

1. The Audit Manager must approve any changes to the audit plan. A revised audit plan that is signed and dated by the Audit Manager is evidence of approval.
  2. The Audit Manager shall modify the audit plan as required and assign required resources to conduct the audit.
- H. Once the audit plan has been finalized, the MSSO Contractor shall generate a formal notification letter.
- I. The notification letter shall include, at a minimum, the following information.
1. Scope and Objectives of the audit
  2. Date(s) of the audit
  3. Organization and/or activity to be audited
  4. Applicable documents
  5. Names and phone numbers of the auditors
  6. The audit schedule
  7. Expected date of the completed audit report
- J. The Audit Manager shall sign and distribute the notification letter to the Directors, Office Chiefs, auditors, and other recipients as required at least 10 working days prior to the audit. Note: the MSSO contractor may accomplish the actual distribution of the notification letter.
- K. The Audit Manager and/or the MSSO contractor shall develop or modify the audit checklists to support the audit objectives.
- L. A signed hard copy of the checklist shall be included in the audit package.
- M. The Audit Manager, or designee, shall approve the checklist prior to the auditor briefing.
- N. Within 5 working days of the audit the MSSO Contractor shall confirm the audit arrangement with the auditees and the audit team to ensure there are no changes and that they will be available. The MSSO Contractor shall call and/or e-mail all parties for confirmation.
- O. The Audit Manager shall hold an Audit Briefing with the lead auditors and the audit team within 2 to 3 days before the audit. This briefing is only required when the auditors are not part of the audit planning

process. The briefings shall include, at a minimum, the following information.

1. Scope and objectives of the audit
2. A list of the documents that will be audited
3. The team member assignments
4. The auditee and areas being audited (dates and times)
5. The checklists details
6. Reporting requirements

## **7.2 Opening Meeting**

- A. The Lead Auditor is responsible for making arrangements for the Opening Meeting with the Director/Office Chief or designee, the auditees, and anyone else from the area that would like to attend. Attendance of Director/Office Chief is discretionary, although highly encouraged. The opening meeting can be waived at the request of the Director/Office Chief or designee.
- B. The Opening meeting should last no longer than 30 minutes and include the following:
  1. Introduction of team members
  2. The scope of the audit
  3. The audit objectives
  4. The audit schedule
  5. An overview of the audit process
  6. The questions that will be covered
  7. How findings will be handled
  8. Who to notify if a finding is found
  9. Questions and answers
- C. An attendance list will be created and kept with the audit documentation. The attendance list will be turned in to the Audit Manager with the audit results.

## **7.3 Conducting the Audit**

- A. The audit will be conducted according to the audit objectives and schedule using the checklist provided as the basis of the audit. Based

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on the findings the scope of the audit may be expanded to investigate potential issues.

- B. A record will be kept of the names of the people interviewed.
- C. Findings will be recorded on the audit checklist worksheet. They will include, at a minimum, the following information:
  - 1. The exact nature of the reason for the finding
  - 2. Objective evidence (as described in 7.3.6). If possible a, hard copy of the evidence will be obtained, or accurate notes will be taken of findings where objective evidence is not available (e.g., missing processes, auditees stating “this isn’t how we do this anymore”)
  - 3. The applicable directive, process, or procedural document number and title, as well as the section of the standard directly related to the finding with verbiage.
  - 4. Comments, where appropriate, that will help clarify the auditor’s thoughts at the time of the finding.
- D. If the Auditor sees something that may be a potential problem, he/she will note the concern on the audit checklist or a separate sheet of paper.
- E. Complaints and/or suggestions for improvements of various DMS processes/procedures from the auditees will be noted separately. When this happens, a separate list will be kept so it can be reviewed later for candidacy for improvement initiatives.
- F. Objective evidence of concurrence and/or nonoccurrence of the requirements may consist of the following items:
  - 1. Completed forms and/or records
  - 2. Reports
  - 3. Meeting minutes
  - 4. Presentations
  - 5. Computer system screen shot or a reference to the system
  - 6. Computer based data (e.g., computer work order)
  - 7. Any other form of documentation that shows compliance or noncompliance to the requirement can be used as objective evidence

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- G. The auditor shall notify the auditee of any issues, which may result in a finding or observation, when discovered. If requested by the respective Director/Office Chief, the auditor shall inform the Director/Office Chief of any issues prior to the closing meeting.
- H. The auditor shall debrief the Audit Manager at the end of each day of the audit. This debrief is meant to give status of how the audit is going and to discuss potential major issues. This debrief is not meant to discuss the validity of the findings.

#### **7.4 Closing Meeting**

- A. The auditor shall conduct a closing meeting with the Audit Manager, Director/Office Chief or designee, the auditees, and anyone else from the area that would like to attend. The closing meeting can be waived at the request of the Director/Office Chief or designee.
- B. The Closing meeting should be no longer than 30 minutes and include the following:
  - 1. Thank everyone for their support during the audit
  - 2. Restate the scope of the audit
  - 3. Restate the audit objectives
  - 4. State that this audit is only “a snapshot in time” and does not guarantee that all problems have been identified
  - 5. Discuss the details of the findings (both good and bad)
  - 6. Discuss any observations you have made or suggestions for improvement made by auditees.
  - 7. State when the audit report will be available
  - 8. Questions and answers
- C. An attendance list will be created and kept with the audit documentation. The attendance sheet will be turned in to the Audit Manager with the audit results.

#### **7.5 Audit Summary and Group Meeting [Internal Audits Only]**

- A. The auditor shall prepare an audit summary for the Audit Manager.
- B. The audit summary shall include both observations and findings with the following classifications:

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1. Observation – The finding is not supported by sufficient objective evidence to confirm (or not) that DMS processes or procedures have been followed or a requirement of the standard has been addressed, but there is enough to warrant further analysis of the finding. These findings are included in the audit report and may result in an NCR or an OFI upon subsequent assessment.
  2. Minor Nonconformance – A Minor Nonconformance is one or both of the following:
    - a) A system nonconformance that judgment and experience indicate is not likely to result in the failure of the DMS or reduce its ability to assure controlled processes or products.
    - b) A minor failure in some part of the DMS such as a single observed lapse in following one item of the Center's policies or processes, or other governing requirement.
  3. Major Nonconformance – A Major Nonconformance is one or more of the following:
    - a) The absence or total breakdown of a system to meet a requirement or Center Key Process. A number of minor nonconformities against one requirement can represent a total breakdown of the system and thus be considered a major nonconformance.
    - b) Any noncompliance that would result in the probable shipment of nonconforming product.
    - c) A condition that may result in the failure of or materially reduce the usability of the products or services for their intended purpose.
    - d) A noncompliance that judgment and experience indicate is likely either to result in the failure of the DMS or to materially reduce its ability to assure controlled processes, products, or services.
    - e) A nonconformance that is of a serious nature. May be a longstanding minor nonconformance from previous assessments, or a collection of similarly minor nonconformances indicating a widespread problem.
- C. Upon conclusion of the audit, the Audit Manager shall call a group meeting with all the auditors and the ADMS.

- D. The auditors shall bring their audit summary along with the objective evidence, audit notes, completed checklists, and the attendance lists to the meeting to discuss the findings.
- E. The Audit Manager may reclassify the audit findings of an auditor based on the information from other auditors. (e.g., several auditors may find that same type of problem that alone may be a minor finding, but together may be considered a finding or even a major finding).
- F. The audit summary, checklists, notes, objective evidence, and meeting sign in sheets shall remain with the Audit Manager as a record of the audit.

## **7.6 Audit Report [Internal Audits Only]**

- A. The Audit Manager shall forward the audit information to the MSSO contractor.
- B. The MSSO Contractor shall compile the audit material along with any notes from the Audit Manager and place the audit information in a binder labeled with the audit cycle number (reference paragraph 7.6.4A).
- C. The MSSO Contractor shall prepare a draft Audit Report based on the audit information.
- D. The Audit Report shall be formatted per Appendix A and forwarded to the Audit Manager. Sections may be added if deemed necessary (e.g., a section for opportunity for improvement)
  - 1. The cover page should have the Dryden Center name and logo, the type of audit (e.g., Internal Audit Report), the audit cycle number, and the audit date(s).
    - a) The audit cycle number shall be formatted XX-I-YY (Example 01-I-01) where XX is the year of the audit (2001 = 01), I is the type of audit (Internal), YY is the number of audits conducted for the year.
  - 2. The second page should be the table of contents
  - 3. The third page should be the audit executive summary formatted similar to appendix A
  - 4. The forth page is the audit information and should include the organization audited, the auditor(s), and the auditees

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5. The fifth page is the nonconformance summary and should include the NCR number and a description of the finding
6. The sixth page is the observation summary and should include the observation number and a description of the finding

**NOTE:** The audit report may be longer than six pages if any of the individual sections is longer than one page.

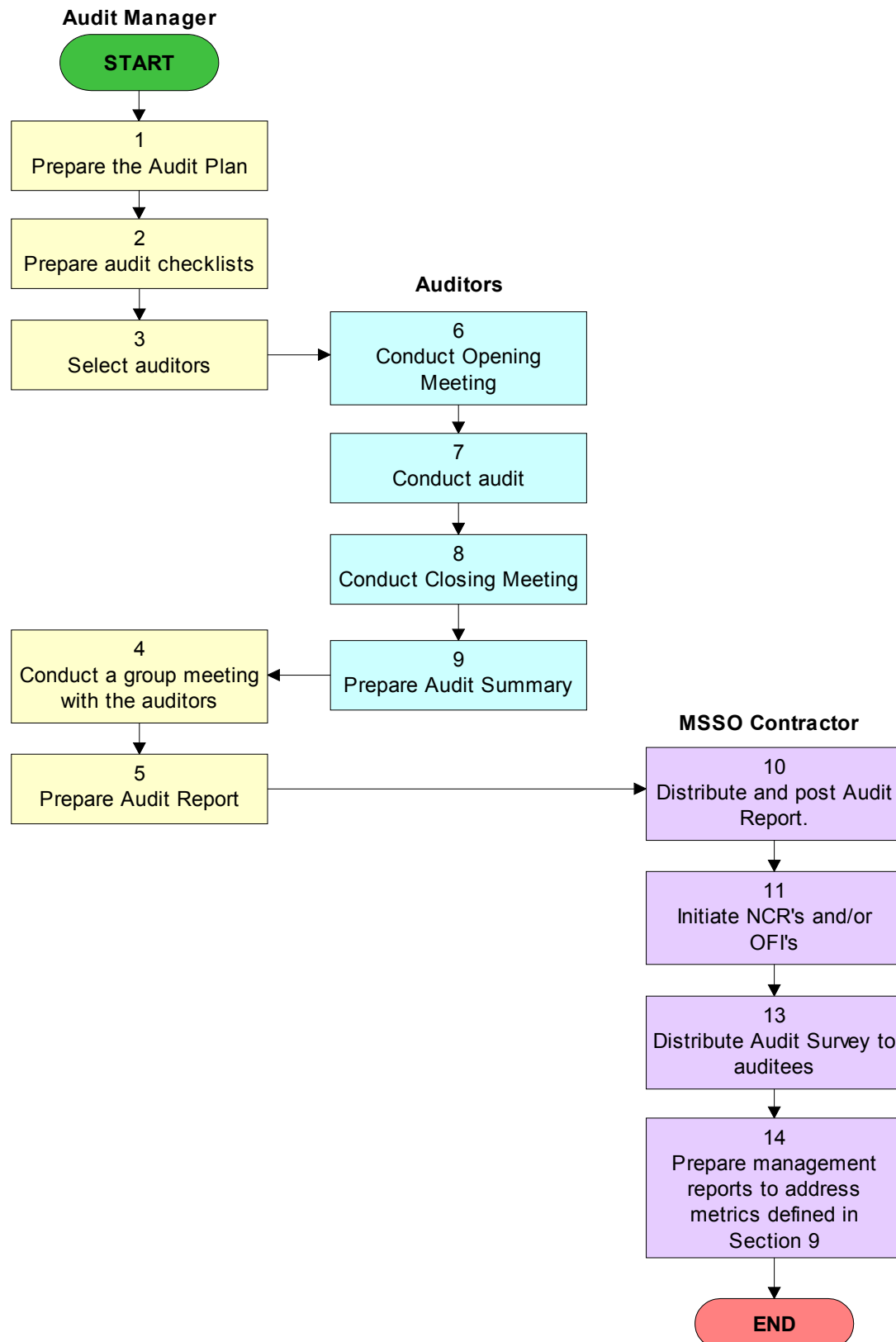
- E. The Audit Manager shall review the report with the ADMS.
- F. Any changes to the report shall be forwarded to the MSSO contractor to incorporate.
- G. The Audit Report is due 5 working days after the completion of the audit. Once the Audit Report is approved by the ADMS or designee, the MSSO contractor shall:
  1. Print the Audit Report and have the Audit Manager sign and date the report.
  2. Convert the electronic copy to .pdf format
  3. Distribute the audit report via e-mail to all Directors/Office Chiefs, Core Team Members, Auditees, ADMS, and Audit Manager.
  4. File the signed copy in the audit file
  5. Post the .pdf and native format files on the MSSO server
  6. Post the .pdf version to the Dryden intranet
- H. The MSSO shall initiate any corrective actions per DCP-X-032 and/or opportunities for improvement per DCP-X-003.
- I. An Audit Survey shall be distributed to the auditees. This survey is designed to review and assess the performance of the auditors and the MSSO.

## **7.7 Audit Report [NQA Audit]**

- A. The NQA Auditor creates the Audit Report according to the NQA required format. The Audit Manager authorizes the report by signing it.
- B. The MSSO Contractor shall convert the NQA Audit Report to a .pdf and post it on the DMS web page.

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## 8.0 FLOWCHART



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## 9.0 METRICS & TREND ANALYSIS

The intent of this procedure is to design and conduct audits of the DMS that ascertain

1. Validation that the DMS is suitable to the needs of DFRC
2. Compliance with the ISO Standard

The effective execution of this procedure not only achieves these two objectives, but also provides for an orderly sequence of audit planning, preparation, conduct, and reporting, such that resources to do this effort are minimized, the disruption to DFRC's normal activities is minimized, participants feel that they "learned" something from the exercise, and the proper reports are created.

The effectiveness of this process will be measured using the following metrics:

- A. Audit problem areas determined by the section of the standard and/or process out of compliance.
- B. Assessment of performance against audit preparation timing requirements:
  1. Audit conducted on schedule
  2. Draft Audit Plan prepared 20 working days before the audit
  3. Audit notification sent out 10 working days prior to the audit
  4. Audit report due 5 working days after the completion of the audit
- C. Assessment of solicited customer survey results of DFRC management and auditors.
- D. Informal feedback from auditees.
- E. Number of major findings from external and/or 3rd party audits.

## 10.0 MANAGEMENT RECORDS & RECORDS RETENTION

The following comprise the management records for this procedure

1. Audit plan
2. Audit schedule
3. Audit report
4. Approved checklists
5. Objective evidence
6. Auditor's notes/completed checklists

These records are retained in the MSSO for seven years per NPG 1441.1.

## **ATTACHMENT A – Audit Report Template**

Page 1 – Cover Page



National Aeronautics and  
Space Administration

Dryden Flight Research Center

# **INTERNAL AUDIT REPORT O2I1**

**February 11 – 27, 2002**

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## Page 3 Audit Executive Summary

## AUDIT EXECUTIVE SUMMARY

|                                   |               |
|-----------------------------------|---------------|
| Date of Audit                     | Area Audited: |
| Objective and Scope of Audit      |               |
| Number of Nonconformities Raised: |               |
| Number of Observations Raised:    |               |
|                                   |               |
| Opening/Closing Meeting:          |               |
| Audit Approach:                   |               |
|                                   |               |
| Audit Manager:                    | Date:         |

## Page 4 Audit Participant Information

## AUDIT PARTICIPANT INFORMATION

| Org. | Auditor(s) | Auditees |
|------|------------|----------|
|      |            |          |
|      |            |          |
|      |            |          |
|      |            |          |
|      |            |          |
|      |            |          |



## Page 5 Nonconformance Summary

**Corrective Action Plans for the nonconformances listed below must be submitted within 15 working days of notification.**

## NONCONFORMANCE SUMMARY

| <b>NCR Number</b> | <b><u>Major/Minor</u></b> | <b><u>Description</u></b> |
|-------------------|---------------------------|---------------------------|
|                   |                           |                           |
|                   |                           |                           |
|                   |                           |                           |
|                   |                           |                           |
|                   |                           |                           |
|                   |                           |                           |

## Page 6 - Observation Summary

**Corrective Action Plans for the nonconformances listed below must be submitted within 15 working days of notification.**

## OBSERVATION SUMMARY

| <b>Observation Number</b> | <b><u>Description</u></b> |
|---------------------------|---------------------------|
|                           |                           |
|                           |                           |
|                           |                           |
|                           |                           |
|                           |                           |
|                           |                           |
|                           |                           |

**Document History Log**

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| Status Change | Document Revision | Effective Date | Page | Description of Change   |
|---------------|-------------------|----------------|------|---|
| Baseline      |                   |                |      |   |
| Revision      | A                 | 4/12/99        | All  | Modified signature block from "Approval" to "Electronically Approved by" on page 1. Modified blocks 2 & 3 of "Audit Manager" and added block 4 on page 1. Changed "Schedule" to "Audit Plan" in block 2 of "Management Representative" on page 1. Deleted "verbally" from block 2 of "Audit Manager" on page 2. Modified block 1 & 2 of "Contractor/DMS Auditor" on page 2 and deleted block 3. Modified block 3, 4, & 5 of "Audit Manager" on page 2 and added Note 5. Changed the word "Review" to "Check" in block 1 of "Audit Manager" and modified block 3. Added responsibilities to the "Management System Support Office Chief" on page 4. Modified blocks 3 & 5 and deleted block 4 of "Audit Manager" on page 4.  |
| Revision      | B                 | 9/20/99        | All  | Page 1: rewrote Note 2 and block 3 of "Audit Manager". Page 2: rewrote Note 3, blocks 2 & 3 of "Contractor/DMS Auditor", blocks 3 & 5 of "Audit Manager", and block 1 of "Person Designated by Directors/Office Chiefs"; modified block 4 of "Audit Manager" and block 1 of "Directors/Office Chiefs"; and added block 2 of "Person Designated by Directors/Office Chiefs". Page 3: modified block 1 of "Directors/Office Chiefs" and blocks 3 & 4 of "Auditor"; rewrote block 3 of "Directors/Office Chiefs" and blocks 1 & 2 of "Audit Manager"; added block 2 of "Auditor". Page 4: modified blocks 4 & 5 of "Audit Manager", block 3 of "MSSO Program Manager", and block 1 of "Management Representative"; changed title of "MSSO Office Chief" to "MSSO Program Manager". |
| Revision      | C                 | 1/19/00        | All  | Page 1: Added new Note 2 & 3, renumbered remaining notes, and modified block 2 & 4 of "Audit Manager". Page 2: Added new Note 6. Page 3: Added responsibilities for "Person Designated by Directors/Office Chiefs", and added blocks 3 & 4 of "Audit Manager". Page 4: Added link to DCP-X-003.   |
| Revision      | D                 | 8-7-03         | All  | Removed steps defining the corrective action process. Changed the document from a flow diagram to a text document with a high level flow diagram imbedded. Added a Purpose, Scope, Performance Metrics, and Management Records sections. Added appendix to provide a template for standardizing the audit report.   |
|               |                   |                |      |   |
|               |                   |                |      |   |
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